

CZECHOSLOVAKI./Organic Chemistry. Natural Compounds and Their
Synthetic Analogs.

G

Libs Jour: Ref Zhur-Khin., No 11, 1959, 38776.

KOH (20°, 12 hrs) to give 6.8 gms VIII, bp 166°/
3 mm. The electrolysis of 3.4 gms VIII and 9 gms
 $\text{CH}_3\text{OCOCH}_2\text{-CH}(\text{CH}_3)\text{CH}_2\text{COOH}$ in 15 ml CH_3OH in the pre-
sence of CH_3ONa (from 0.1 gm Na) at 40 v and 0.9
amp with subsequent treatment and distillation in a
column [sic] gives 4.2 gms IX, bp 134-136°/4 mm,
 n_D^{20} 1.4455, d_4^{20} 0.9752 together with 1.3 gm of the
dimethyl ester of III, bp 163-164°/4 mm, n_D^{20} 1.4459,
 d_4^{20} 0.9887. -- L. Novotny.

Card : 6/6

G-55

COUNTRY : Czechoslovakia 3-3
 CATEGORY : Organic Chemistry--Natural compounds and their
 synthetic analogs.
 ABS. JOUR. : RZhKhim., No. 16 1959, No. 57216
 AUTHOR : Sykora, V., Herout, V., and Sorm, F.
 INST. : Not given
 TITLE : Terpene Chemistry. XCII. Absolute Configuration
 of Compounds in the Cadinene Series.
 ORIG. PUB. : Chem Listy, 52, No 7, 1314-1319 (1958): Collec-
 tion Czechoslov Chem Commun, 23, No 12, 2181-
 ABSTRACT : From a comparison of the rotational dispersion
 curves for 15-norcadinanone-10 (I), and 10-
 hydroxycadinanone-5 (II), prepared from α -
 cadinol (cf. RZhKhim, No 3, 1959, 8395), with
 9-methyl-trans-decalone-4, the absolute configu-
 ration of which is known, the authors have
 derived the absolute configuration for (-)-cadi-
 nanedihydrobromide expressed by formula III.
 This configuration is confirmed by the oxidation
 of β -cadinane (IV) by HNO_3 or by ozonation
 CARD: 1/6 *2187 (1958)

COUNTRY : Czechoslovakia G-3
 CATEGORY :
 ABS. JOUR. : RZKhim., No. 16 1959, No. 57216
 AUTHOR :
 INST. :
 TITLE :
 ORIG. PUB. :
 ABSTRACT : of IV followed by oxidation with dil HNO₃ to D(+)-isopropylsuccinic acid (V). I does not isomerize when refluxed for 45 min with 10% NaOH in alcohol. When (-)-cadinanedihydrochloride is heated with CH₃COONa in CH₃COOH followed by chromatography on alkaline Al₂O₃ followed by fractionation in a column with 70 theoretical plates packed with Diksone [sic], IV is obtained, bp 124°/9 mm, n_D²⁰ 1.5059, d₄²⁰ 0.9239. 9.5 gms IV are added over 2 hrs to
 CARD: 2/6
 158

COUNTRY : Czechoslovakia G-3
 CATEGORY :
 APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000618020002-2
 ABS. JOUR. : RZKhim., No. 16 1959, No. 57216
 AUTHOR :
 INST. :
 TITLE :
 ORIG. PUB. :
 ABSTRACT : 200 ml of boiling 65% HNO₃, the solution is refluxed for 30 min, and the usual treatment is applied; a mixture of acids (5.3 gms) is obtained which is chromatographed on a column packed with powdered cellulose. Petroleum ether, C₆H₆, a 9 : 1 mixture of C₆H₆-ether, a 56 : 4 : 1 mixture of C₆H₆-ether-CHCl₃, and acetone are used in the elution. The fractions obtained are subjected to paper chromatography; elution with ether yields 54 mg V, mp 86.5 and 88° (from
 CARD: 3/6

COUNTRY : Czechoslovakia
GATMORZ :

9-5

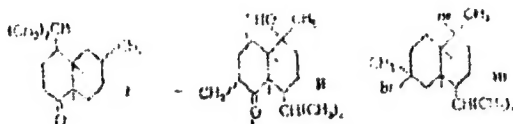
ABS. JOUR. : RZKham., No. 16 1959, No.

57216

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : benzene), [X]¹⁰D + 20.4° (c = 1.96: water).
Further elution of the paper moistened with 1%
H₂SO₄ yields an additional 112 mg of V. Better



CARD: 4/6

154

COUNTRY : Czechoslovakia 9-5
 CATEGORY :
 ABS. JOUR. : AZKhim., No. 15 1959, No. 57216
 AUTHOR :
 INST. :
 TITLE :
 ORIG. PUB. :
 ABSTRACT : yields of V are obtained by the ozonation of 7.3
 gms IV in 80 ml CH_3COOH and the decomposition of
 the ozonides at 100° with a mixture of 45 ml
 water and 2.2 ml 30% H_2O_2 . The residue after
 the evaporation of the solution is oxidized
 (1 hr, $110-120^\circ$) with 50% HNO_3 and V_2O_5 ; after
 the usual treatment, 2.03 gms of the anhydride
 of V are obtained which on heating with water
 give V (yield 15%); the latter is purified by
 paper chromatography. The reaction dispersion

CARD: 5/6

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000618020002-2
 ABS. JOUR. : AZKhim., No. 15 1959, No. 57216
 AUTHOR :
 INST. :
 TITLE :
 ORIG. PUB. :
 ABSTRACT : [rotational interaction?] curves for I and III
 and the IR spectrum of IV are given.
 L. Novotny

CARD: 6/6

FIALA, O.; HEROUT, V.; KORNON, M.

Bone needle biopsy in the differential diagnosis of destructive processes. Rev. Czech.M. 6 no.4: 253-65 '60.

1. Orthopaedic Clinic, Medical Faculty, Charles University,
Hradec Kralove. Director: Prof. J. Vavřda, M.D. Institute of
Pathology, Medical Faculty, Charles University, Hradec Kralov.
Director: Prof. A. Fingerland, M.D.
(BONE AND BONES pathol)
(BIOPSY)

AUTHOR : SEMCHENKOVA, I.
 SUBJECT : Organic Chemistry. Natural Substances and
 Their Synthetic Analogs
 ASS. JOUR. : RZKhim., No. 1 1960, No. 1399
 AUTHOR : Romanuk, M.; Kharout, V.; Sorn, P.
 TITLE : On Substances Isolated from Plants. VII. Struc-
 ture of Aplotaxene from *Cistus* Etheral Oil
 PUB. : Chem. Listy, 1958, 52, No 10, 1985-1986; Collect.
 Czechoslov. Chem. Commun., 1959, 24, No 6, 2012-2022
 ABSTRACT : On the basis of infrared spectra, hydrogenation,
 ozonolysis, as well as ozonization and
 partial hydrogenation, aplotaxene (I) isolated
 from the essential oil of *Saussurea lappa* (Burm.)
 plant, was ascribed the structure n-heptadeca-
 tetraene-1,8,11,14, which partly contradicts
 the older data of Semmler and Feldstein (Sem-
 mler, F. W., Feldstein, J., Ber., 1914, 47.
 2687). By the hydrogenation of I over PtO₂ in

CARD: 1/5

G-43

COUNTRY :
CATEGORY :

ABST. JOUR. : REKHEM., No. 1 1960, No. 1399

AUTHOR :
TITLE :

ORIG. PUB. :

ABSTRACT
cont'd

glacial CH_3COOH until cessation of H_2 absorp-
tion, catalyzed by H_2SO_4 (n-heptadecanal, m.p.
113, b.p. 1.4 mm, d₄ 0.7776 (refractive
index was measured with the aid of a refractometer), was obtained. The reaction was
carried in CH_3COOH at 60, the product was boiled
for 1 hour with water, distilled and, in the
distillate, 2,4-dinitrophenylhydrazones of
formaldehyde, acetaldehyde and propionaldehyde,

REF:

2/1

COUNTRY :
CATEGORY :

ABS. JOUR. : RZKhim., No. 1 1960, No. 1399

AUTHOR :
TIT. :
SUBT. :

ORIG. PUB. :

ABSTRACT
cont'd

: Alcohol over Pd/C with deactivated quinoline,
following the absorption of 1 mole of H₂, a
homogeneous dihydro-derivative, b.p. 100-
110°C/15 mm, was obtained, which was subjected
to ozonolysis in glacial CH₃COOH at 0°; the
product was then boiled for 2 hours with water
and in addition oxidized with HBrO₄. By ex-
traction with ether and distillation, caproic
acid (p-bromophenacyl ether, b.p. 70°) and

CARD:

4/5

ST. PER. : RZhZhSh., No. 1 1960, No. 1399

ST. PER. :
ST. PER. :
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ST. PER. : caprylic acid were obtained; p-bromocaprylic
ST. PER. : ether, m.p. 65°. In the residue after distilla-
ST. PER. : tion, adipic, pimelic and sebacic acids
ST. PER. : were found by paper chromatography. A sugges-
ST. PER. : tion is expressed as to the biogenesis of I
ST. PER. : from unsaturated C₁₈-acid through its decar-
ST. PER. : boxylation. Report VI, see RZhZhSh., No. 21,
ST. PER. : 1959, No 26377.-- J. Kovar

ST. PER. : 5/5

G-50

HERONT, U.

CHEM/352-11/10

AUTHORS: Doleš, J., Štěpánek, M., Hradec, M., Horák, V. and
Bom, J.

TITLE: On Terpenes (Cyperaceae) XIV. Structure of Lactucine
(XIV. Struktura Laktucinu)

PERIODICAL: Chemické listy, 1958, Vol. 52, Nr. 11, pp 2094 - 2095
(Czechoslovakia)

ABSTRACT: Lactucine $C_{15}H_{26}O_5$ and its p-hydroxyphenylacetate
lactucopicroin $C_{23}H_{32}O_7$ have long been known to be the
bitter principles of certain members of the Compositae
(e.g. Lactuca virga Cichorium intybus). The structure
of lactucine was previously examined in detail by Späth
and by Wessely in the early 1950's. According to these
authors it is a sesquiterpene lactone, which yields on
acid-catalyzed dehydration an uncharacterized diene.
The authors of the present paper state they are able to
show that lactucine has a guaianolide skeleton with an
unsaturated lactone ring closed at position 6. On the
basis of U.V. and I.R. spectra they formulate a diene
system for lactucine situated in the guaianolide
skeleton. One of the isomers of lactucine is a

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secondary one on C(8); the second is a primary
one most likely situated on C(14). The authors give
further evidence for structure I for lactucine in
addition to that given previously (Ref 5) and which
appeared simultaneously with that of Barton and Maravannu
(Ref 6). The authors also propose the absolute con-
figurations of certain asymmetric centres. There are
17 references, 5 of which are Czech, 4 German, 1 Japanese
and 7 English.

ASSOCIATION: Oddělení přirodních látek, Chemický ústav,
Československá akademie věd, Praha (Division of Natural
Products, Institute of Chemistry, Czechoslovakian Ac.Sc.,
Prague.)

SUBMITTED: June 10, 1958

Card 2/2

Herout, V.

Gas chromatography. Tr. from the Czech. p.354

MAGYAR KEMIKUSOK LAPJA. (Magyar Kemikusok Egyesülete)
Budapest, Hungary. Vol.14, no.9, September 1959

Monthly List of East European Accessions (SEAI) LC, Vol.8, no.11
November 1959
Uncl.

HEROUT, V.; SORM, F.; SUCHY, M.

"Terpenes." XCVIII. Proof of structure of arctiopicrin with a note on its stereochemistry. In English. p. 1542.

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech.,
Vol 24, No. 5, May 1959

Monthly List of East European Accessions (EEAI), IC, Vol 8, No. 6, Sept. 59
Unclassified

HOLUB, M.; HEROUT, V.; SORM, F.

On plant substances. VIII. Analysis of substances extracted from the roots of a *Laserpitium latifolium* L. IX. Identification of 3,4-methylenedioxy-5-methoxypropiofenone in the roots of *Laserpitium latifolium* L. Coll Cs chem 25 no.12:3926-3937 '59. (REAL 9:6)

1. Abteilung für Naturstoffe, Chemisches Institut Tschechoslovakische Akademie der Wissenschaften, Prag.
(*Laserpitium latifolium*) (Propiofenone);
(Methylene group) (Methoxy group)

HOLUB, M.; HEROUT, V.; HORAK, M.; SORM, F.

Terpens. CIV. The constitution of betulenols from oil from the buds of white birch. (*Betula alba* L.) In English. Coll.Cz.Chem. 24 no.11: 3730-3738 N '59. (HEAI 9:5)

1. Department of Natural Products, Institute of Chemistry, Czechoslovak Academy of Science, Prague.
(Terpenes) (Betulinol) (Birch)

VRKOC, J.; HEROUT, V.; SORM, F.

On plant substances. X. Isolation of crystalline parts of the
everlasting sand *Helichrysum arenarium* MCH. Coll Cz chem 25 no.
12:3938-3954 '59. (EEAI 9:6)

1. Abteilung für Naturstoffe, Chemisches Institut, Tschecho-
slovakische Akademie der Wissenschaften, Prag.
(*Helichrysum arenarium*)

Herout, V.

Identity of jatamansone and valeranone. J. Klepinsky, V. Herout, and F. Šorm (Czechoslovak Acad. Sci., Prague). *Tetrahedron Letters* 1960, No. 3, 9-12; cf. *CA* 53, 3386c. Comparison of phys. consts. of derivs. and of degradation products proved the identity of so-called jatamansone (I) (Govindachari, *et al.*, *CA* 54, 4657f) and valeranone (II) (Stoll, *et al.*, *CA* 52, 4559c). Redn. of II with LiAlH_4 gave valeranol, $\text{C}_{10}\text{H}_{18}\text{O}$, d_4 1.0046, n_D^{20} 1.5005, $[\alpha]_D^{20}$ 51.4° (CHCl_3), dehydrated with $\alpha\text{-C}_6\text{H}_5(\text{CO})_2\text{O}$ at 270-80° to valerene, $\text{C}_{10}\text{H}_{16}$, d_4 0.9045, $[\alpha]_D^{20}$ 96.07°, hydrogenated with prerduced PtO_2 to valerane, $\text{C}_{10}\text{H}_{18}$, d_4 0.8965, n_D^{20} 1.4830, also obtained by treatment of II ethylenethioketal with Raney Ni in dioxane. The phys. consts. of II, d_4 0.9712, n_D^{20} 1.4944, $[\alpha]_D^{20}$ -43.0°, m.p.s. of semicarbazone, 205-7° oxime, 113-14°, and 2,4-dinitrophenylhydrazones, 99-100°, were very similar to the corresponding values 0.9623, 1.488, -40.1°, 206.8°, 112°, and 101° recorded for I. Ozonization of II monobenzylidene deriv., m. 101-2°, and cyclization of the dicarboxylic acid, $\text{C}_{10}\text{H}_{16}\text{O}_4$ (III), m. 236-7°, with $\text{Ba}(\text{OH})_2$ gave the cyclic norvaleranone, $\text{C}_{10}\text{H}_{16}\text{O}$, ν 1735 cm^{-1} (semicarbazone m. 238-40°), converted to a liquid monobenzylidene deriv. and ozonized to norvaleranic acid (IV), $\text{C}_{10}\text{H}_{16}\text{O}_4$, m. 143°, dehydrated by pyrolysis or on treatment with Ac_2O to the cryst. anhydride, $\text{C}_{10}\text{H}_{12}\text{O}_3$ (V), m. 77-8°, brominated to a cryst. bromo anhydride (VI), m. 146-8°. Quant. bromination showed that a methylene group and a quaternary C atom were adjacent to the CO group in II. Dehydrogenation of valeranol with S at 180° 4 hrs. or Se at 280-300° 1 hr. or of valerene 1.5 hrs. with S at 180° or 6 hrs. at 200-50° or 30 min. with iodine at 280° gave no detectable amt. of an aromatic deriv. or of azulene. Only 2 hrs. dehydrogenation of valeranol with 50% Pd-C at 320-40° led to a mixt. of azulenic hydrocarbons. The degradation of I gave products, m. 233-4°, 143°, 86-6°, and 143°, corresponding to III, IV, V, and VI. A provisional formulation with a partial structure was suggested.

C. R. Addinall

VONASEK, F.; HEROUT, V.; SORM, F.

Terpenes. CVII. The composition of essential oil from false cubebs and the structure of cubeb camphor. Coll Cz chem 25 no.3:919-926 (EEAI 9:12)
Mr '60.

1. Department of Natural Products, Institute of Chemistry, Czechoslovak Academy of Science, Prague (for Herout and Sorm).
2. Aroma, Prague 2 (for Vonasek)
(Pepper) (Terpenes)

NOVOTNY, L.; HEROUT, V.; SORM, F.

On terpenes. Part 109: A contribution to the structure of
absinthin and anabsinthin. Coll Cz Chem 25 no.5:1492-1499
My '60.

1. Department of Natural Products, Institute of Chemistry,
Czechoslovak Academy of Sciences, Prague.

NOVOTNY, L.; HEROUT, V.; SORM, F.

On terpenes. Part 110: A contribution to stereochemistry
of absinthin and artabsin. Coll Cz Chem 25 no.5:1500-1505
My '60.

1. Department of Natural products, Institute of Chemistry,
Czechoslovak Academy of Sciences, Prague.

HEROUT, V1.; VORTEL, V1.

Pathology of arteriography. Cas. lek. cesk. 99 no.25:761-767
17 Je '60.

1. Patologickoanatomicky ustav lekarske fakulty KU v Hradci Kralove,
prednosta prof. Dr. Sc. MUDr. A. Fingerland.
(ANGIOGRAPHY compl.)

HEROUT V.
EXCERPTA MEDICA Sec 5 Vol. 11/6 Pathology June 58

1591. BACTERIAL ENDOCARDITIS CAUSED BY E. COLI - Endocarditis bacterialis způsobená mikroby *Escherichia coli* - Černík F., Herout V. and Výmola F. - VNITŘ. LÉK. 1957, 3/6 (528-529) Graphs 1 Illus. 3

A 48-year-old man, with more than 10 yr. lasting heart failure, developed sub-acute bacterial endocarditis due to *Esch. coli* type 6. This microorganism was isolated many times from the blood. Atrial fibrillation occurred. Antibiotics were ineffective. The diagnosis was confirmed by post-mortem examination.

Procházka - Prague (L, 6.5, 18)

HEROUT, V., Dr.; HEROUT, V., Dr.; HEROUT, V., Dr.

Late metastases of sarcoma of hilus of kidneys to the lungs 16 years after nephrectomy. Rozhl. chir. 36 no.5:297-299 May 57.

1. Chirurgická klinika a patol. anatom. ústav VIA Jevy, hradeč Kralove.

(KIDNEY NEOPLASM, compl.

sarcoma of hilus metastasizing to lungs 16 years after nephrectomy (Cz))

(LUNG NEOPLASM,

metastatic from sarcoma of kidney hilus 16 years after nephrectomy (Cz))

(NEPHRECTOMY, compl.

metastasis of sarcoma of kidney hilus to lungs 16 years after nephrectomy (Cz))

Czechoslovakia/ Organic Chemistry - Naturally occurring substances
and their synthetic analogs

E-3

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11823

Author : Kovacs Odon, Herout Vlastimil, Horak Milan, Sorm Frantisek

Title : On Terpenes. LXVII. Hydrogenation Products of Santonin and Alantolactone

Orig Pub : O terpenech. LXVII. Hydrogenacni produkty santoninu a alantolaktonu.
Chem listy, 1955, 49, No 12, 1856-1869 (Czech); Sb. chekhosl. khim.
rabot, 1956, 21, No 1, 225-239 (English)

Abstract : On hydrogenation of santonin (I) under different conditions, are formed three isomers of 3-ketosantonolide-5,12 (IIa, b and c), and on further hydrogenation there are obtained the corresponding 3-hydroxysantonolides-5,12 (IIIa, b, c). On reduction according to Clemensen, IIa and IIc give santonolide-5,12 (IVa), while IIb is converted to santonolide-5,12 /sic/ (IVb). On interaction of IIa, b and c with ethylenedithiol (V) there are obtained ethylene thioketals, which on desulfurization with skeleton Ni form, respectively, IVa, b and c. IIc is readily isomerized to IIa. LiAlH_4 reduces IVa to santandiol-5,12 (VI), and alantanolide-5,12 (VII) to alantandiol-5,12 (VIII). Presented are the

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Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11823

infrared spectra of IVa, b and c, VII, IIa, b and c, IIIc, VI, VIII, 5,12-oxidosantan (IX) and alanten- Δ (7)-ol-12 (X). On hydrogenation of 0.1 mole I in 200 ml CH_3OH with Pd/BaCO_3 IIa is obtained, yield 74%, MP 158° , $[\alpha]_D^{18} + 3.0^\circ \pm 1^\circ$ (c 5.0) (all $[\alpha]_D$ determined in chloroform); mother liquors of IIa are evaporated, residue dissolved in aqueous NaOH, after acidification ether is used to extract 3-keto-5-hydroxy-santanic acid (XI), yield 10.8%, MP $190-192^\circ$ (from 50% CH_3OH), $[\alpha]_D^{20} + 20.7^\circ \pm 1^\circ$ (c 7.45). Solution of 2 g XI and 0.5 g p-toluene sulfonic acid (XII) in 50 ml CH_3COOH held for 5 hours, diluted with water and extracted with ether to recover IIb, yield 89%, MP $103-105^\circ$ (from 70% CH_3OH), $[\alpha]_D^{21} + 11.3^\circ \pm 1^\circ$ (c 3.88). By hydrogenation of IIb in glacial CH_3COOH with PtO_2 is obtained IIIb. MP $213-215^\circ$ (from CH_3OH), $[\alpha]_D^{20} - 8.5^\circ \pm 1^\circ$ (c 4). 4 g I are hydrogenated in CH_3OH with PtO_2 (120 atm, 20°), to get IIIc, yield 44%, MP 135° (from 50% CH_3OH), $[\alpha]_D^{20} + 42.7^\circ \pm 1^\circ$ (c 3.97). Mixture 0.66 mole CrO_3 , 0.1 ml water, 1 mole IIIc and 6 ml CH_3COOH left standing 20 hours, diluted with water (6 ml) and several drops alcohol, evaporated, and ether extraction

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Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11823

gives IIc, MP 145-146°, $[\alpha]_{20D} + 77.5 \pm 2^\circ$ (c 5.12). 0.01 mole IIa reduced according to Clemmensen (8 g Zn; 21 ml HCl; 1:2, boiled 12 hours), ether extraction gives IVa, yield 93%, MP 154° (from 90% alcohol), $[\alpha]_{20D} + 26.8 \pm 1^\circ$ (c 4.45). In the same manner from IIb is obtained IVb, yield 70%, MP 86-87° (from alcohol), $[\alpha]_{20D} - 27.9^\circ \pm 2^\circ$ (c 3.8). 100 mg IIc boiled 12 hours with 4 ml HCl (1:2), to get 65 mg IIa. Mixture of 0.01 mole IIa, 50 ml glacial CH_3COOH , 0.01 mole V and 0.96 g XII, held 3 hours at 20°, poured on ice, to get ethylene thioketal IIa, yield 99%, MP 195-196° (from ethyl acetate), $[\alpha]_{20D} + 44.7^\circ \pm 1^\circ$ (c 4.95), which (0.005 mole) on boiling for 8 hours in 120 ml dioxane with 15 ml skeleton Ni I gives IVa with yield 98%. Analogously from IIb is prepared ethylene thioketal, yield 81%, MP 122-123° (from CH_3OH), $[\alpha]_{20D} - 11.08^\circ \pm 1^\circ$ (c 6.32), and from it IVb, yield 95%. Under the same conditions IIc is converted over the ethylene thioketal (yield 95%, MP 166-167° (from ethyl acetate), $[\alpha]_{20D} + 37.9^\circ \pm 1^\circ$ (c 3.95)) into IVc, MP 137-139° (following crystallization from alcohol and di-iso-propyl ether, and sublimation (12 mm,

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Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11823

110°), $[\alpha]_D^{20} + 92.2 \pm 2^\circ$ (c 3.73). Mixture of 0.1 mole LiAlH_4 , 0.05 mole IVa and 600 ml ether is stirred 2 hours, decomposed with 6 ml water and 200 ml 25% H_2SO_4 , and VI is extracted with ether, yield 98%, MP 154-155° (from benzene), $[\alpha]_D^{20} 25.3^\circ \pm 1^\circ$ (c 4.12 in chloroform- CH_3OH , 1:1). 2 mole VI dissolved at 0° in 5 ml SOCl_2 , after 1.5 hour SOCl_2 driven off, following chromatography on Al_2O_3 (petroleum ether) there are obtained 180 mg cyclic sulfite of VI, MP 75-76° (from alcohol), $[\alpha]_D^{20} -253^\circ \pm 2^\circ$ (c 2.84), which is saponified in aqueous-alcoholic NaOH to get VI. Boiling for 30 minutes of 2.5 mmole VI with 0.1 g XII in 12 ml C_6H_6 gives IX, yield 84%, BP 132-133°/8 mm, $n_D^{20} 1.4972$, $d_4^{20} 0.9788$, $[\alpha]_D^{20} -39.54^\circ$. On steam distilling 3 kg of Inula Helenium roots, crystallizing the distillate from 70% alcohol and hydrogenating the product at 45° with PtO_2 in ethyl acetate, there are obtained 16.3 g of VII, MP 147-147.5° (from alcohol), $[\alpha]_D^{18} + 14.6 \pm 1^\circ$ (c 1.92). On reduction of VII with LiAlH_4 VIII is obtained, yield 93%, MP 111-112° (from benzene-petroleum ether, 1:3), $[\alpha]_D^{20} -6.2 \pm 1^\circ$ (c 4.55). VIII is converted to cyclic sulfite (like VI) yield 47%, MP

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Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11823

114-116° (from alcohol) $[\alpha]^{20}_D - 52.4^\circ \pm 2^\circ$ (c 3.62). By dehydration
under conditions used for IX, there is obtained from VIII the X, yield
88%, BP 133-135°/8 mm, $n^{20}_D 1.5078$, $d^{20}_4 0.9879$, $[\alpha]^{20}_D - 32.7^\circ \pm 2^\circ$.

Card 5/5

VLASTIMIL, HEROUT

E-3

Czechoslovakia/ Organic Chemistry - Naturally occurring substances
and their synthetic analogs

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11824

Author : Sychy Milos, Herout Vlastimil, Sorm Frantisek

Title : On Terpenes. LXVIII. Formation of Two Tetraalkyl Azulenes on Treatment of Wormwood.

Orig Pub : O terpenech. LXVIII. Vznik dvou tetraalkylazulenu pri zpracovani pelynu ku praveho. Chem. listy, 1955, 49, No 12, 1870-1878 (Czech); Sb. chek-hosl. khim. rabot, 1956, 21, No 2, 477-486 (English; Russian summaries)

Abstract : Technical mixture of azulenes, that is obtained on treatment of wormwood with alkali, was separated, by countercurrent extraction with petroleum ether and 52 2% solution of H_3PO_4 , yielding two new azulenes: $C_{16}H_{20}$ (I), recovered from the petroleum ether, and $C_{15}H_{18}$ (II), isolated from the phosphoric acid fractions. On oxidation of I and II with $KMnO_4$, were obtained acetic and propionic acids. It is shown that by heating (24 hours) of wormwood extracts with 10% solution of NaOH there is obtained hamazulene, while heating them in the presence of wormwood stems yields I and II. II and I are formed on alkaline alkylation

Card 1/3

E-3

Czechoslovakia/ Organic Chemistry - Naturally occurring substances
and their synthetic analogs

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11824

of hydroxy-guaiadienolide (III) and absinthin (IV), respectively, with HCHO and CH_3CHO . On hydrogenation of I and II in CH_3COOH with PtO_2 , decahydro-derivatives are formed. On this basis the authors attribute to I the structure 1,4-dimethyl-2,7 or 6,7-diethylazulene, and to II that of 1,2,4- or 1,4,6-trimethyl-7-ethylazulene. For comparison were synthesized 1,4-dimethyl-7-sec-butylazulene (V) and 1,4-dimethyl-3,7-diethylazulene (VI). From 0.7 g technical mixture of I and II were isolated 0.254 g I, BP $173^\circ/9 \text{ mm}$; trinitrobenzolate (TNB), MP 133° (from alcohol), and 0.16 g II, BP $160^\circ/11 \text{ mm}$; TNB, MP 150° (from alcohol). Mixture of 50 mg III with 20 mg 30% HCHO and 100 ml 10% NaOH is heated 20 hours at 100° , after acidification the azulene is removed by steam distillation, and from it II is isolated with petroleum ether over Al_2O_3 . Mixture of sec- $\text{C}_4\text{H}_9\text{Li}$ (from 27 g sec- $\text{C}_4\text{H}_9\text{Cl}$, 2.2 g Li and 50 ml petroleum ether) and a solution of 2.2 g 2,8-dimethyl-(0,3,5)-bicyclo-decanone-5 in 30 ml ether, is boiled 6 hours, decomposed with water and dilute H_2SO_4 , and from the ether extract is isolated 2,8-dimethyl-5-sec-butyl-(0,3,5)-bicyclodecanol-5 (VII), yield 39%, BP $157^\circ/9 \text{ mm}$.

Card 2/3

Czechoslovakia/ Organic Chemistry - Naturally occurring substances
and their synthetic analogs

E-3

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 1182⁴

On heating 1 g VII with 1.5 g KHSO₄ (180°, 20 minutes) is obtained 2,8-dimethyl-5-sec-butyl-(0,3,5)-bicyclodecene (VIII), d_4^{20} 0.8813. Mixture of 0.6 g VIII and 0.35 g S is heated 15 minutes at 180°, the product is subjected to chromatography on Al₂O₃, and petroleum ether is used to eluate V, yield 11%; TNB, MP 126° (from alcohol). Mixture of 0.4 g hamazulene, 50 ml CH₂Cl₂, 8.2 ml (CH₃CO)₂O and 1.5 ml BF₃ etherate, allowed to stand for 48 hours; CH₂Cl₂ extract washed with water and after removal of solvent subjected to chromatography on Al₂O₃; benzene is used to eluate 0.25 g 3-acetyl-hamazulene (IX); TNB, MP 123° (from alcohol). Mixture of 0.22 g IX, 30 ml ether and 0.15 g LiAlH₄, after standing for 24 hours, is decomposed with 100 ml water, and the ether extract, after removal of the ether, is subjected to chromatography on Al₂O₃; petroleum ether is used to eluate VI; TNB, MP 148° (from alcohol). Presented are ultraviolet spectra of I, II, V and VI, infrared spectra of I, II and their decahydro-derivatives, and of V, as well as the visible spectra of I, II and V.

Card 3/3

VLASTIMIL, HEROUT

E-3

Czechoslovakia/ Organic Chemistry - Naturally occurring substances and their synthetic analogs

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11825

Author : Romanuk Miroslav, Herout Vlastimil, Sorm Frantisek
Title : On Terpenes. LXIX. Structure of Dehydrokostuslactone.

Orig Pub : O terpenech. LXIX. Konstituce dehydrokostuslaktonu. Chem. listy, 1955, 49, No 12, 1879-1885 (Czech); Sb chekhosl. khim. rabot, 1956, 21, No 4, 894-901 (English; Russian summaries)

Abstract : Dehydrokostuslactone (I) (from Saussurea lappa Clarke) yields on hydrogenation a hexahydro-derivative (II), which was identified, by its infrared spectrum, as guaianolide (see RZhKhim, 1954, 27127). On dehydrogenation of I gives hamazulene (III), while dehydrogenation of II yields a mixture of S-guaiazulene (IV), Se-guaiazulene (V), III and 2,4-dimethyl-7-ethylazulene (VI). Ether solution of kostus oil was washed with bicarbonate, saponified by boiling with NaOH, solution of the salts washed with ether, and by acidification reconverted into lactone, which was washed free from phenols with cold alkali: thus was obtained I, BP 140-1430/0.5 mm, MP 61°, $[\alpha]_D^{20}$ - 12.9°. On hydrogenation of I

Card 1/2

Czechoslovakia/ Organic Chemistry - Naturally occurring substances
and their synthetic analogs

E-3

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11825

with PtO_2 in glacial CH_3COOH was obtained II, BP $135-137^\circ/0.4$ mm,

n_D^{20} 1.5076, d_4^{20} 1.0545, $[\alpha]_D^{20} + 46.5^\circ$. 11.4 g II and 11.6 g Se

heated to $320-335^\circ$ and from the products was recovered, by chromatography on Al_2O_3 and extraction with 79% solution of H_3PO_4 , a mixture

of azulenes which, by means of paper chromatography (impregnated with paraffin oil and washed with 48% H_3PO_4), was separated into IV, V,

III, trinitrobenzolate MP 130° , and VI, trinitrobenzolate MP 112° .

Presented are infrared spectra of I, II, VI, visible and ultraviolet spectra of VI.

Card 2/2

Modern methods of organic chemistry. II. Organic preparative work with limited amounts of material. J. H. Hergenrother (Czech. Akad. Chem., Prague) and O. Kovacs. Magyar Kem. Lapja 13, 101-7 (1958). A review with 31 references. P. M. D.

HEROUT, Vlastimil, dr., inz., Dr.Sc.

Second International Congress on Ethereal Oils in Prague. Vestník
CSAV 68 no.5:676-677 '59.

MOTL, O.; HEROUT, V.; SORM, F.

Terpenes. CXII. The composition of the oil from *Juniper oxycedrus* L. berries. Coll Cs Chem 25 no.6:1656-1661 Je '60. (EEAI 10:9)

1. Department of Natural Products, Institute of Chemistry, Czechoslovak Academy of Science, Prague.

(Terpenes) (Juniper)

ROMANUK, M.; HEROUT, V.

Terpenes. CXIV. On stereoisomeric vetivanes and sesquiterpenic hydrocarbons of vetiver oil. Coll Cz chem 25 no.10:2540-2551 0 '60.
(EKA1 10:9)

1. Department of Natural Products Institute of Chemistry, Czechoslovak Academy of Science, Prague.

(Terpenes) (Vetiver oil) (Vetivane)
(Hydrocarbons) (Sesquiterpenes)

CEKAN, Z.; PROCHAZKA, V.; HEROUT, V.; SORM, F.

Terpenes. CXV. Isolation of globicin, a guianolide from *Matricaria globifera* (Thunb.) Druce.. Coll Cz chem 25 no.10:2553-2558 0 '60.
(EEAI 10:9)

1. Research Institute for Natural Drugs, Prague (for Cekan and Prochazka) 2. Department of Natural Products, Institute of Chemistry, Czechoslovak Academy of Science, Prague. (for Herout and Sorm)

(Terpenes) (Globicin) (*Matricaria globifera*)

LUKES, V.; HEROUT, V.

Apparatus for preparative gas-liquid chromatography. Coll Cz Chem 25
no.11:2770-2776 N '60. (EBAI 10:6)

1. Institut fur organische Chemie und Biochemie, Tschechoslowakische
Akademie der Wissenschaften, Prag.
(Chromatography)

SUCHY, M.; HERCUT, V.; SORM, F.

Terpenes. CXVI. Structure of cynaropicrin. Coll Cz Chem 25 no.11:
2777-2782 N '60. (EEAI 10:6)

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Science, Prague.
(Terpenes) (Cynaropicrin)

SYKORA, V.[deceased]; NOVOTNY, L.; HOLUB, M.; HEROUT, V.; SORM, F.

The proof of structure of carotol and daucol. Coll Cz Chem 26 no.3:
788-802 Mr '61. (EEAI 10:9)

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Science, Prague.

(Carrots) (Carotol)

SOUCEK, M.; HEROUT, V.; SORM, F.

Terpenes. CXVIII. Constitution of parthenolide. Coll Cz Chem 26
no.3:803-810 Mr '61. (EEAI 10:9)

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Science, Prague.

(Chrysanthemum parthenium) (Terpenes)

DOLEJS, L.; HEROUT, V.; SORM, F.

Terpenes. CXX. Sesquiterpenic compounds of *Baccharis genistelloides*
Pers. Structure of palustrol. Coll Cz Chem 26 no.3:811-817 Mr '61.
(KEAI 10:9)

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Science, Prague.

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(Sesquiterpenes) (Palustrol)

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

(Terpenes) (Essences and essential oils)

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On terpenes. Part 108: Epimeric aromondendrenes. Stereoisomerism of ledol, viridifluorol and lobulol. Coll Cz Chem 25 no.5:1483-1491 My '61.

1. Department of Natural products, Institute of Chemistry, Czechoslovak Academy of Sciences, Prague.

HOCHMANNOVA, J.; HEROUT, V.; SORM, F.

On terpenes. Part 127: Isolation and structure of sesquiterpenic lactones from common yarrow (*Achillea millefolium* L.). Coll Cz Chem 26 no.7:1826-1831 JI '61.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

(Terpenes) (Lactones)

BENESOVA, V.; HEROUT, V.; SORM, F.

On terpenes. Part 128: The existence of α - and β -humulene. Coll
Cs Chem 26 no.7:1832-1838 J1 '61.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

(Terpenes) (Humulene)

DOLEJS, L.; HEROUT, V.

On terpenes. Part 129: Composition of the oil and root extract from *Fokienia hodginsii*. Coll Cz Chem 26 no.8:2045-2049 '61.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: [not given]

Affiliation: Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences, Prague

Source: Prague, Collection of Czechoslovak Chemical Communications,
Vol 26, No 10, October 1961, pp 2551-2556

Data: "On Terpenes. CXXX. Isolation of Digeranyl and Isodigeranyl
from Bergamot Oil."

Authors:

✓ SOUCEK, M
HEROUT, V
SORM, F

HEROUT, V

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: [not given]

Affiliation: Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague

Source: Prague, Collection of Czechoslovak Chemical Communications, Vol 26, No 10, October 1961, pp 2612-2623.

Data: "On Terpenes. CXXXI. Isolation and Structure of Costunolide, Balchanolide, Isobalchanolide and Hydroxybalchanolide, Siquiterpinic Lactones of Germacrane Type from *Artemisia balchanorum* H Krasch."

Authors:

✓ HEROUT, V

✓ SUCHY, M

✓ SORM, F

HEROUT, V.

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: [not given]

Affiliation: Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague

Source: Prague, Collection of Czechoslovak Chemical Communications, Vol 26, No 11, November 1961, pp 2916-2920

Data: "On Plant Substances. XII. Neutral Substances From *Telekia speciosa* (Schreb) Baumg."

Authors:

✓ BENESOVA, V
HEROUT, V

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On terpenes. Part 133: Structure of acorenone, a sesquiterpenic ketone from sweet-flag oil (*Acorus calamus* L.) Coll Cz Chem 26 no.12:3183-3185 D '61.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Science, Prague.

FIALA, Oldrich; HEROUT, Vladimir; KLEN, Rudolf.

Repair of joint defects with homogenous cartilages in experimental conditions. Acta chir. orthop. trauma. Cech. 28 no.6:463-468 D '61.

1. Ortopedická klinika lékařské fakulty University Karlovy v Hradci Kralove, prednosta prof. MUDr. Jaroslav Vavřda Ustav pathologicke anatomie v Hradci Kralove, prednosta prof. MUDr. Antonin Fingerland, Dr. Sc. Tkanova ustredna fakultni nemocnice v Hradci Kralove, prednosta MUDr. Rudolf Klen.

(JOINTS surg)

(CARTILAGE transpl)

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KŘEPINSKÝ, J; ROMANUK, M; HEROUT, V; ŠORM, F.

Czechoslovakia

Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences -- Prague - (for all)

Prague, Collection of Czechoslovak Chemical Communi-
cations, No 11, 1962, pp 2638-2652

"On Terpenes. CXLII. Structure of the Sesquiterpenic
Ketone Valeranone."

DOLEJŠ, L; HEKOUT, V.

Czechoslovakia

Institute of Organic Chemistry, and Biochemistry,
Czechoslovak Academy of Sciences -- Prague - (for all)

Prague, Collection of Czechoslovak Chemical Communi-
cations, No 11, 1962, pp 2654-2660

"On Terpenes. CXIV. Constitution of Eupatoriopicrin,
a Germacranolide from Eupatorium cannabinum L."

BENESOVA, V.; HEROUT, V.; KLYNE, W.

On terpenes. Part 134 : Configuration of hydroxyl group in telekin.
Coll Cz Chem 27 no.2:498-500 F '62.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague and Westfield College, University of
London, England.

NOVOTNY, L.; ~~J~~IZBA, J.; HEROUT, V.; SORM, F.

Plant substances. Part 16: The constituents of coltsfoot
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no.6:1393-1399 Je '62.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

NOVOTNY, L.; HEROUT, V.; SORM, F.

Plant substances. Part 17: Constituents of *Petasites*
albus (L) Gaertn. rhizomes. Coll Cz Chem 27 no.6:1400-1403
Je '62.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

NOVOTNY, L.; HEROUT, V.

Plant substances. Part 15: The composition of *Artemisia sieversiana* Willd. Coll Cz Chem 27 no.6:1508-1510 Ja '62.

1. Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences, Prague.

SUCHY, M.; HEROUT, V.

On terpenes. Part 136: Identity of the bitter principle
from *Centaurea stoebe* (L.) Sch. et Thell. with cnicin.
Coll. Cz Chem 27 no.6:1510-1512 Je '62.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

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On terpenes. Part 139 : Isolation and structure of scabiolide, another sesquiterpenic lactone with a ten-membered ring in molecule. Coll Cs Chem 27 no.8:1905-1913 Ag '62.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

SUCHY, M.; HEROUT, V.; SORM, F.

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1. Institut of Organic Chemistry and Biochemistry, Czechoslovak
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KREPINSKY, J.; HEROUT, V.

Plant substances. Part 18: Isolation of terpenic compounds from
Solidago canadensis L. Coll Cz chem 27 no.10:2459-2462 0 '62.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
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HOVOTNY, L.; HEROUT, V.

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

KREPINSKY, J.; ROMANUK, M.; HEROUT, V.; SORM, F.

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

HOLUB, M.; HEROUT, V.

On terpenes. Part 147: Isolation of desacetoxymatricarin from
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1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
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BLAHA, K.; HEROUT, V.

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HEROUT, Vlastimil

The 2d International Symposium on the Chemistry of Natural
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1. Člen korespondent Československé akademie věd.

HEROUT, V

CZECHOSLOVAKIA

SUCHY, M; HEROUT, V; SORM, F.

Institute of Organic Chemistry and Biochemistry of the
Czechoslovak Academy of Sciences, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications,
No 7, 1963, pp1715-1718

"On Terpenes. CLIV. Lactones of the Germacranolide Group and
Their Stereochemical Relationship."

CZECHOSLOVAKIA

SUCHY, M; HEROUT, V; SORM, F.

Institute of Organic Chemistry and Biochemistry of the
Czechoslovak Academy of Sciences, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications,
Vol 8, 1963, pp 2257-2260

"On Terpenes. CLV. Structure of Damsine, a Sesquiterpenic
Lactone from *Ambrosia maritima* L."

HEROUT, V.

CZECHOSLOVAKIA

KREPINSKY, J; ROMANUK, M; HEROUT, V; SORI, F.

Institute of Organic Chemistry and Biochemistry of the Czechoslovak Academy of Sciences, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications,
No 11, 1963, pp 3122-3128

"On Terpenes. CLVI. Absolute Configuration of the Sesquiterpenic Ketone Valeranone."

(4)

HOLUB, I.; NEBOUR, V.

CSCR /

Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of
Science, Prague (both)

Prague, Collection of Czechoslovak Chemical Communications, No 12, 1963,
pp 2980-2981

"On Terpenes. CXLVII. Isolation of Desacetyoxymatricarin from Artemisia
leukodes Schrenk."

VRKOC, J.; HEROUT, V.; SORM, F.

On terpenes. Pt. 149. Coll Cz Chem 28 no.4:1084-1086 Ap '63.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

HEROUT, V.

The 2d International Symposium on the Chemistry of Natural Substances
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HOLUB, M.; POPA, D.P.; HERJUT, V.; SORM, F.

Terpenes. Pt. 159. Coll Cz Chem 29 no.4:938-942 Ap '64.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague (for all except Popa).
2. Institute of Chemistry, Moldavian Academy of Sciences, Kishinev, U.S.S.R. (for Popa).

HOCHMANNOVA, J.; HERGET, V.

On Terpenes. Pt. 169. Coll Cz Chem 29 no.10:2369-2376 0 '64.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

ROMANUK, M.; HEROUT, V.; SORM, F.; NAVES, Y.R.; TULLEN, P.;
BATES, R.B.; SIGEL, C.W.

Terpenes. Pt. 161. Coll Cz Chem 29 no.4:1048-1058
Ap '64.

1. Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences, Prague; Givaudan
Corporation, Vernier-Geneva, Switzerland; University of
Illinois, Urbana, Ill. 2. University of Arizona, Tucson,
Arizona (for Bates).

RESEARCH REPORT

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Institute of Organic and Physical Chemistry of
Czechoslovak Academy of Sciences, Prague

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No 10, 1965, pp 3473-3477

"On Steroids. XLV. Revision of Structure of Antibiotic,
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CZECHOSLOVAKIA

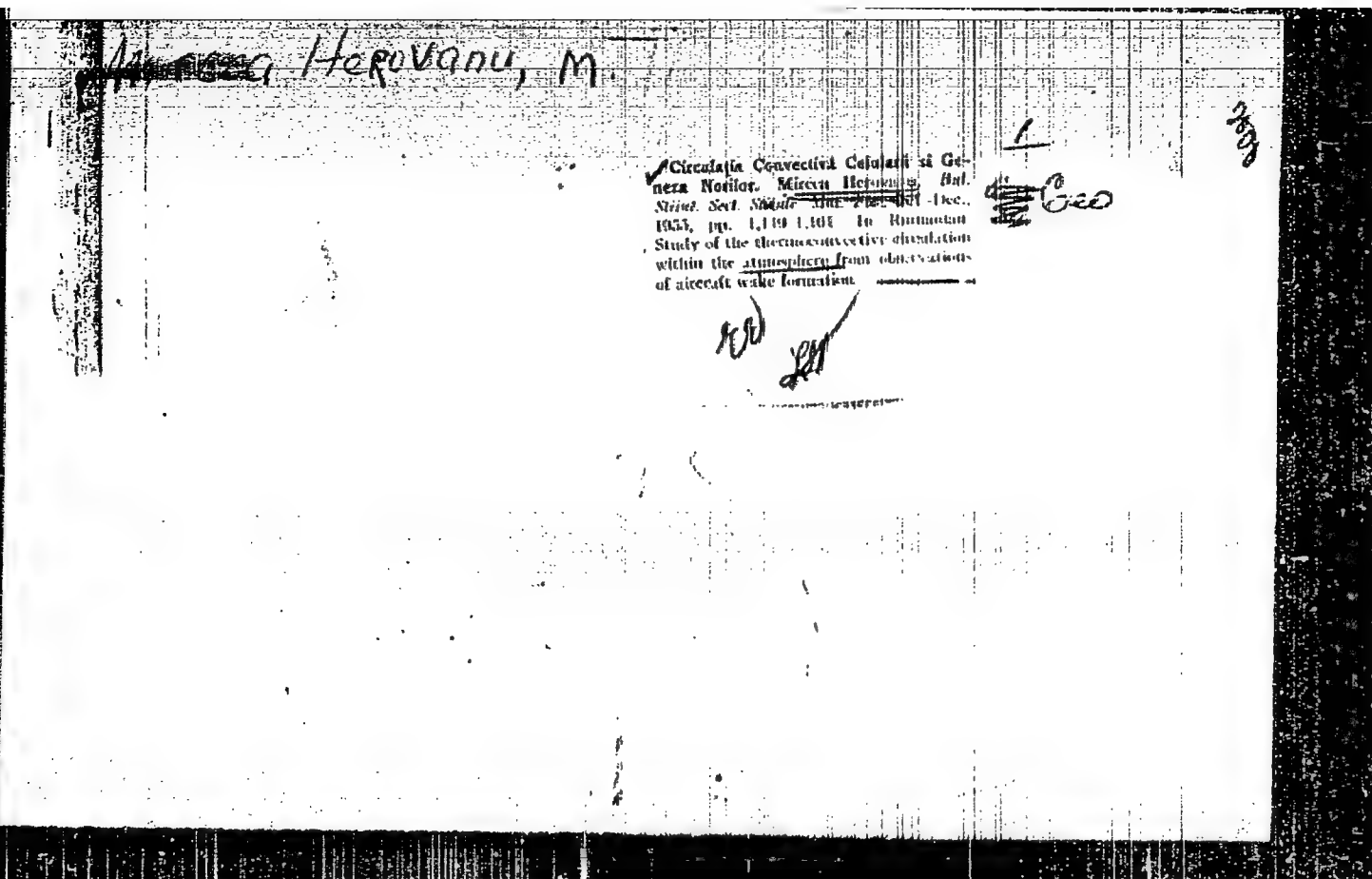
VLANOV, H; HOLUB, M; HEROUT, V.
HEROUT, V.

Institute of Organic Chemistry and Biochemistry,
Czechoslovak Academy of Sciences, Prague - (for all)
Vlahov visiting scientist from Institute of Organic
Chemistry, Bulgarian Academy of Sciences, Sofia,
Bulgaria.

Prague, Collection of Czechoslovak Chemical Communi-
cations, No 2, February 1967, pp 822-829

"On terpenes. Part 185: The structure of two hydro-
carbons of cedalene type isolated from Juniperus Pin-
gite oil of Bulgarian origin."

137 AND 140 CDDPDS										140 AND 141 CDDPDS									
PROCESSED AND PROPERTY INDEX																			
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>HEROVANU, M.</p> <p>SA</p> <p>14-6</p> </div> <div style="width: 45%; text-align: right;"> <p>A 53</p> <p>S</p> </div> </div>										<p>1702. Atmospheric ionization at Mangalia. M. HEROVANU. <i>Soc. Roumaine de Physique, Bull.</i>, 62, 74, pp. 87-78, 1930. --The author has determined the number of small ions in the atmosphere of Mangalia on the Black Sea, during the months of July and Aug., 1930. The analysis of observation data shows the influence of the radioactive sources of the region and brings to light a peculiarity not yet observed elsewhere, namely the increasing of the quotient of positive and negative ions with the vapour tension of water in the atmosphere. The author studies also the relation between the number of ions and the terrestrial electric field, the intensity of u.v. radiation and the opacity of the atmosphere.</p> <p style="text-align: right;">AUTHOR.</p>									
450.516 METALLURGICAL LITERATURE CLASSIFICATION																			
10000 1100000										10000 1100000									
10000 1100000										10000 1100000									



HEROVANU, M.

SCIENCE

Periodicals: STUDII SI CERSETARI DE FIZICA. Vol. 8, No. 2, *apr/June 1955*

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Monthly List of East European Accessions (EEAI) IC, Vol. 8, No. 2,
February 1959, Unclass.

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... A practical method for stopping the light diffusion in the atmosphere. ... 673.

Vol. 4, no. 3, July/Aug. 1956

BULETIN STIINTS

SCIENCE

RUSSIA

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HEFOVANU, M.

Optical filters in meteorology. p. 419

GAZETA MATEMATICA SI FIZICA. SERIA A. (Societatea de Stiinte
Matematice si Fizice din Romania)
Vol. 8, no. 8, August 1956

Bucuresti, Rumania

SOURCE: East European List (EEAL) Library of
Congress, Vol. 6, No. 1, January 1957

HEROVANU, M.

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SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

HERUVANA, MIRCEA

~~HERUVANA, MIRCEA~~. Méthode graphique pour l'étude de la
diffusion de la lumière dans l'atmosphère. Acad. R. P.

2
1-FW

HEROVANU, Mircea

M. Herovanu, "Neue Methoden zum Studium der Strahlungsdiffusion in der Atmosphaere," Zeitschrift fuer Meteorologie (Berlin), 11/2, February 1957, pp. 33-40.

The original text was in French. The author's address is given as Bukarest I, Rue Colonel Poenaru-Bordea, No. 16.

3(1)
3(3)

RUM/2-11-9-12/42

AUTHOR: Heroveanu, Mircea, Doctor of Physical Sciences, University Lecturer

TITLE: Some Results of the International Geophysical Year.
At the Threshold of the Atmosphere.

PERIODICAL: Știință și Tehnică, Seria a II-a, Vol 11, Nr 9,
pp 17-18 (RUM)

ABSTRACT: The author publishes data on the terrestrial atmosphere, obtained by Soviet scientists during the International Geophysical Year. The globe is enclosed in an atmospheric layer roughly 1,000 km thick, which becomes more and more rare with increasing height. However, there exists a second (outer) atmosphere which extends to a height of approximately 50,000 km. Soviet scientists have confirmed that the density of the air at a height of 380 km is 40 times greater than had been believed till now. The temperature decreases up to 10 km, remaining then more or less constant up to 25 km. ✓

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Up to 50 km, the temperature first increases, then again decreases. This anomaly is due to the ozone which absorbs a part of the ultraviolet solar radiation, transforming it into heat. The reason for the increase of temperature from -100°C to $+1,500^{\circ}\text{C}$, between 100 and 500 km is not yet clear. Formerly, the ionosphere was known only to an altitude of 320 km. Measurements performed in 1958 with rockets and Sputniks supplied some information on the ionization of the air beyond this limit. Ionization slowly decreases retaining half its value at 470 km. The quantity of free electrons increases with height, considerably exceeding the quantity resulting from ionization of the air. Thus, a large part of the free electrons in the outer atmosphere has to have another origin. They also possess considerable energy, greater than the energy of the air atoms, among which they move. The 3rd Sputnik and the Soviet cosmic rocket have proved that the globe is encircled by an aureole, consisting of electrified

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particles, which extend the terrestrial atmosphere to an altitude of 50,000 km. The formation of this aureole is due to the magnetic properties of the globe. The shape of the aureole is determined by the lines of force of the Earth's magnetic field. The aureole extends the atmosphere in the equatorial plane. There are two zones of higher concentration in the aureole encircling the earth. The first zone, located closer to the globe has some particles, probably protons (nuclei of H atom) which possess very high energy. The more remote zone has electrons of average energy. The discovery of the terrestrial aureole is of importance in explaining the outer atmosphere phenomena. Concerning the formation and the nature of its constituent particles, there are several theories. The following hypothesis was put forward at the last conference of the Committee of the International Geophysical Year in Moscow in February 1959: The atomic nuclei of the high atmosphere release neutrons under the effect

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of constant bombardment by cosmic radiation particles. These neutrons idle in space until they are transformed into a pair of electrified particles: 1 proton and 1 neutron. Since this transformation is performed within the earth's magnetic field, the particles remain inside the field to form the aureole. According to another theory, the particles originate from the sun. Electrified particles emitted by the sun are captured by the magnetic field of the earth, thus forming the aureole. According to this theory, the solar corona considerably exceeds the imaginary circle which till now was believed to be its limit, and encompasses almost all the planets. The solar corona is allegedly composed of electrons and protons and has, in the region of the earth's orbit, a temperature of at least 200,000°C. Thus, the terrestrial atmosphere receives heat from the solar atmosphere. This would also explain the fact that the temperature of the outer atmosphere decreases from the periphery to the center. However, orbiting in such a hot environment, ✓

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the earth would have been gradually heated up, melted and vaporized. This did not happen because of the reason: The solar gas in which the earth rotates, is extremely rarefied, but the quantity of heat necessary to heat up a body depends on its density. Thus the rarefied solar gas, although very hot, contains only very little heat, only enough to heat up the air of the outer atmosphere, the density of which is also very low. The solar heat is not strong enough to heat up the inner atmosphere or even the Earth. The problem of heating up the outer atmosphere is complicated by the Earth's magnetic field which captures the electrified particles of the solar corona and forms the terrestrial aureole. On the other hand, the non-electrified solar particles are not captured by the magnetic field and can heat up the other regions of the Earth's atmosphere. The electrified particles can descend along the magnetic lines of force to an altitude of 60 - 1,000 km above the Earth, where they form the

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polar auroras. The present results of the International
Geophysical Year are very simple, but very useful in
indicating new lines of research. There are 4 figures. ✓

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